

REMARKS

Reconsideration of this application in view of the above amendments and following remarks is requested. After entry of this amendment, claims 1-21, 23-33, 35-42 and 44-54 are pending in the application. In this amendment, claims 1, 5, 13, 14, 18, 23, 24, 32, 33, 35, 36, 44-48 and 50 are amended, claims 22, 34 and 43 are canceled, and claims 51-54 are added.

As a preliminary matter, applicant's undersigned representative would like to thank Examiner Edwards for his time and guidance, on September 24th and 28th, 2004, in discussing and clarifying the issues of the office action, particularly the claim objections and the claim rejections under 35 U.S.C. §112, second paragraph. The examiner's cooperative nature is much appreciated.

In the office action dated June 4, 2004, the examiner requires corrected drawings because of the objections raised by the official draftsperson on Form PTO-948; objects to claims 22-44, 46, 47, 48, and 50 under 37 § 1.75(a) as failing to particularly point out and distinctly claim the subject matter that applicant regards as the invention; objects to claims 1-21, 23, 31-33, 35, 45, 46, 48 and 50 under 37 § 1.75(d)(1) as failing to find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description; rejects claims 47-50 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that applicant regards as the invention; rejects claims 1, 3, 4, 12, 16, 17, 22, 23, 31, 34, 43, 45, 47 and 48 under 35 U.S.C. §102(e) as anticipated by Sheehan (US Patent No. 6,106,466); and rejects claims 2 and 11 under 35 U.S.C. §103 as being unpatentable over

DOCKET NO.: WSHU-0043
Application No.: 09/840,629
Office Action Dated: June 4, 2004

PATENT

Sheehan (US Patent No. 6,106,466) in view of Seyed-Bolorforosh (US Patent No. 5,841,889).

Further, the examiner states that claims 5-10, 13-15, 18-21, 24-30, 32, 36-42 and 44 would be allowable if rewritten to overcome the objections under 37 CFR § 1.75 and to include all of the limitations of the base claim and any intervening claims; states that claims 33 and 46 would be allowable if rewritten to overcome the objections under 37 CFR § 1.75; states that claim 49 would be allowable if rewritten to overcome the rejection under 35 U.S.C. §112, second paragraph, and states that claim 50 would be allowable if rewritten or amended to overcome the rejection under 35 U.S.C. §112, second paragraph, and the objection under 37 CFR § 1.75.

Drawings

In paragraph 1 of the office action, the examiner requires corrected drawings because of the objections raised by the official draftsperson on Form PTO-948. Corrected drawings are attached to this response and amendment, which remove the explanatory language accompanying the figure numbers of the originally filed drawings. Proposed additional drawings are also attached, to address and satisfy the examiner's claim rejections under 35 U.S.C. §112, second paragraph, discussed below. Formal drawings can be provided upon the examiner's approval of the corrected and proposed additional drawings.

Claim Objections

In paragraph 3 of the office action, the examiner objects to claims 22-44, 46, 47, 48, and 50 under 37 CFR § 1.75(a) as failing to particularly point out and distinctly claim the subject matter that applicant regards as the invention.

Regarding claims 22, 34 and 47, the examiner characterizes the claim language “performing a representation of the physical model” grammatically awkward and difficult to understand, requiring clarification. Although applicants do not necessarily agree with the examiner that the respective claim language fails to particularly point out and distinctly claim the subject matter, claims 23, 24, 35, 36, 44 and 47 have been amended to employ alternative, equivalent language to clarify the above. (i.e., are amended to “creating a representation of the physical model”). Claim 22 is canceled; however, claims 23 and 24, made independent, comply with the above. Claim 34 is also canceled; however, claims 35, 36 and 44, made independent, comply with the above.

Regarding claims 33, 46 and 50, the examiner characterizes the claim language “performing a random phasor sum representation of the physical model” grammatically awkward and difficult to understand, requiring clarification. Although applicants do not necessarily agree with the examiner that the respective claim language fails to particularly point out and distinctly claim the subject matter, claims 33, 46 and 50 have been amended to employ alternative, equivalent language to clarify the above (i.e., are amended to “creating a random phasor sum representation of the physical model”).

Regarding claims 22, 33, 34, 46, 47 and 50, the examiner states that it is unclear from applicant’s disclosure whether the claim language “creating a physical model” is an actual material model that is imaged, or if the model exists in a virtual space such as a computer graphics representation. Although applicants do not necessarily agree with the examiner that the respective claim language fails to particularly point out and distinctly claim the subject matter, claims 23, 24, 33, 35, 36, 44, 46, 47 and 50 have been amended to employ alternative, equivalent language to clarify the above (i.e., are amended to “creating a representative

physical model"). Claim 22 is canceled; however, claims 23 and 24, made independent, comply with the above. Claim 34 is canceled; however, 35, 36 and 44, made independent, comply with the above.

In paragraph 4 of the office action, the examiner objects to claims 1-21, 23, 31-33, 35, 45, 46, 48 and 50 under 37 § 1.75(d)(1) as failing to find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description. The examiner states that a complete and thorough definition of a microstructure is not provided in the specification; therefore, for examination purposes, the plain meaning of this word shall be used. The examiner requires clarification. To clarify, applicants submit that the plain meaning of the term microstructure is intended throughout the specification and the claims.

Claim Rejections – 35 USC § 112

In paragraph 6 of the office action, the examiner rejects claims 47-50 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that applicant regards as the invention. The examiner states that the corresponding structure, material, or acts are not described in the specification in specific terms and one skilled in the art would not be able to identify the structure, material or acts from that description. MPEP § 2181. Accordingly, the examiner requires appropriate correction.

MPEP § 2181 states that:

Whether a claim reciting an element in means- (or step-) plus-function language fails to comply with 35 U.S.C. 112, second paragraph because the specification does not disclose adequate structure (or material or acts) for performing the recited function is closely related to the question of whether

the specification meets the description requirement in 35 U.S.C. 112, first paragraph. See *In re Noll*, 545 F.2d 141, 149, 191 USPQ 721, 727 (CCPA 1976) (unless the means-plus-function language is itself unclear, a claim limitation written in means-plus-function language meets the definiteness requirement in 35 U.S.C. 112, second paragraph so long as the specification meets the written description requirement in 35 U.S.C. 112, first paragraph).

MPEP § 2181 further provides that: 1) applicant can clarify the record by amending the written description such that it expressly recites what structure, materials, or acts perform the function recited in the claim element; 2) under proper circumstances, drawings may provide a written description of an invention as required by 35 U.S.C. 112. *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1565, 19 USPQ2d 1111, 1118 (Fed. Cir. 1991); and 3) that any claim in the application as originally filed is deemed to satisfy the written description requirement for that claimed subject matter, since original claims are part of the disclosure. *In re Gardner*, 475 F.2d 1389, 177 USPQ 396 (CCPA 1973).

Applicant, therefore, has amended the specification by adding four (4) drawings to clarify the corresponding structure, material, or acts in specific terms so that one skilled in the art would be able to identify the structure, material or acts associated with claims 47-50, in accordance with MPEP § 2181. Accordingly, no new matter has been added.

Claim Rejections – 35 USC § 102

The examiner rejects claims 1, 3, 4, 12, 16, 17, 22, 23, 31, 34, 35, 43, 45, 47 and 48 under 35 U.S.C. §102(b) as anticipated by Sheehan (US Patent No. 6,106,466). Applicant respectfully traverses these rejections. A claim is anticipated under 35 USC § 102(b) only if each and every element set forth in the claim is disclosed (i.e., identically described) in a

single prior art reference. Applicant does not agree that Sheehan discloses each and every element of the respective claims.

Sheehan is purportedly directed to a method and system for identifying and delineating a boundary or contour of an internal organ from image data, and more specifically, to a method and system for delineating the inner and outer surfaces of the organ by processing image data from multiple planes in three-dimensional space. From Sheehan, the examiner references Figure 11 as anticipating the independent claims, by characterizing Figure 11 as disclosing the formation of an image model by incorporating imaging system characteristics, gross shape, and microstructure.

The formation of an image model in Sheehan, as illustrated in Figure 11, is detailed at col. 14, lines 27-52. In this description, certain limitations of Sheehan's invention are revealed; particularly that Sheehan is limited to large scale structure. For example, equations 1-6 are referenced as included in the method of forming an image model. These equations assume the reception of a reflection from a boundary larger than a wavelength. Also, Sheehan's disclosed methods are only applicable to smooth surface tissue; rough surface tissue could only be developed empirically in Sheehan. Accordingly, Sheehan is not capable of, and does not disclose, teach or suggest, the development of sub-wavelength microstructure, as recited in the rejected independent claims of the present invention as amended (i.e., claims 1, 23, 35, 45, 47 and 48). Claims 22, 34 and 43 are canceled.

For the foregoing reasons, applicant respectfully requests that the examiner withdraw the rejection of claims 1, 23, 35, 45, 47 and 48 under 35 U.S.C. § 102(b). Claims 3, 4, 12, 16, 17 and 31 are dependent, either directly or indirectly, on the above-referenced, pending independent claims, and are thereby allowable for at least the reasons described above.

Claim Rejections – 35 USC § 103

Applicant respectfully traverses the examiner's rejection of claims 2 and 11 under 35 U.S.C. §103(a) as being unpatentable over the combination of Sheehan (US 6,106,466) and Seyed-Bolorforosh (US 5,841,889).

As specifically discussed above, Sheehan fails to disclose or teach the development of sub-wavelength microstructure. Seyed-Bolorforosh also fails to teach the above-reference feature, even if combined with Sheehan.

The examiner characterizes Seyed-Bolorforosh as disclosing a three-dimensional point spread function for development of imaging system characteristics (col. 3, lines 46-50). However, Seyed-Bolorforosh fails to teach to above-referenced features of the present invention as claimed and not disclosed, taught, or suggested by Sheehan.

Accordingly, Sheehan, whether alone or in combination with Seyed-Bolorforosh, fails to teach the present invention as claimed. Reconsideration of the 35 USC § 103 rejections is therefore respectfully requested.

Allowable Subject Matter

In office action paragraph 11, the examiner states that claims 5-10, 13-15, 18-21, 24-30, 32, 36-42 and 44 would be allowable if rewritten to overcome the objections under 37 CFR § 1.75, and to include all of the limitations of the base claim and any intervening claims.

Applicant has rewritten claims 5, 13, 18, 24, 32, 36 and 44 into independent form to include all of the limitations of the base claim and any intervening claims. Also, all applicable objections under 37 CFR § 1.75 have been addressed and satisfied for the above-identified claims, as discussed above.

In office action paragraph 12, the examiner states that claims 33 and 46 would be allowable if rewritten or amended to overcome the objections under 37 CFR § 1.75.

Applicant has amended claims 33 and 46 to address and satisfy the objections under 37 CFR § 1.75, as discussed above.

In office action paragraph 13, the examiner states that claim 49 would be allowable if rewritten or amended to overcome the rejection under 35 U.S.C. §112, second paragraph.

Applicant has amended the specification, as discussed above, to correct and satisfy the rejection of claim 49 under 35 U.S.C. §112, second paragraph.

Finally, in office action paragraph 14, the examiner states that claim 50 would be allowable if rewritten or amended to overcome the rejection under 35 U.S.C. §112, second paragraph, and the objection under 37 CFR § 1.75.

Applicant has amended claim 50, and has amended the specification, as discussed above, to correct and satisfy the rejection of claim 50 under 35 U.S.C. §112, second paragraph, and the objection under 37 CFR § 1.75.

Claims Added by this Response and Amendment

Dependent claims 51-54 are added by this response and amendment to more completely cover certain aspects of applicant's invention. Claims 51-54 are patentable for at least the reasons described above for independent claim 1. Claims 51-54 find support in portions of the specification including, but not limited to, page 6, line 16, through page 7, line 2; page 8, lines 10-18; and page 10, lines 13-21.

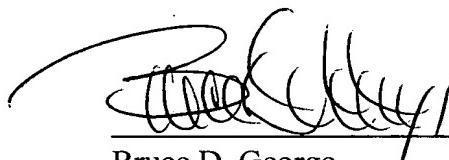
DOCKET NO.: WSHU-0043
Application No.: 09/840,629
Office Action Dated: June 4, 2004

PATENT

CONCLUSION

In light of the above amendments and remarks, applicant submits that pending claims 1-21, 23-33, 35-42 and 44-54 are allowable, and requests that the examiner issue an early notice of allowance. The examiner is invited to call the undersigned attorney in the event that a telephone interview will advance prosecution of this application.

Date: Oct. 22, 2004



Bruce D. George
Registration No. 43,631

Woodcock Washburn LLP
One Liberty Place - 46th Floor
Philadelphia PA 19103
Telephone: (215) 568-3100
Facsimile: (215) 568-3439